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10/822,667	04/13/2004	Vincenzo Sestito	Q80624	7768
72875 7590 01/08/2009 SUGHRUE MION, PLLC 2100 Pennsylvania Avenue, N.W. Washington, DC 20037				
EXAMINER RENNER, BRANDON M				
ART UNIT		PAPER NUMBER		
2419				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USPTO@sughrue.com
kglyndman@sughrue.com
USPatDocketing@sughrue.com

Office Action Summary

Application No.

10/822,667

Applicant(s)

SESTITO ET AL.

Examiner

BRANDON RENNER

Art Unit

2419

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 and 19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 and 19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

Response to Amendment

This communication is in response to the amendment filed 7/28/2008. The amendment has been entered and considered.

Claim Objections

Claims 1-17, and 19 are objected to because of the following informalities: The claim recites "Low order **and/or** Higher Order". The claim language is inconsistent with the dependent claims because it recites a choice low order or high order and thus the subsequent claims which specify high/low order would lack antecedent basis. Examiner will examine in view of the assumption "Low order **and** High Order".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-17 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Independent claims 1, 15, and 19 recite a N:1 relationship. It is unclear if the N represents the working paths or the protection paths. Further, the claims recite the limitation "more than one protecting resource shared among different (i.e. more than one) working resources)". The N:1 relationship appears

to be inconsistent with the plurality of protection and plurality of working resources as claimed.

Appropriate correction required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 6, 8, 13, 15, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gonda US 2003/0043736 in view of Ikawa US 6,141,320.

Regarding claims 1 and 15, Gonda discloses enhancing a trail/path protection function in a SDH/SONET network, the network comprising a number of working resources and a number of protection resources and transmitting signal frames having a section overhead in SDH technology, or a Line OverHead in SONET technology (Figure 3), and a POH:

said protection function comprising linear MSP N: 1 trail protection function (in SDN/SONET networks, an APS provides protection such as N:1; Paragraph 39) based on transmission of protection information through K 1 and K2 bytes of Section OverHead in SDH or Line OverHead in SONET (K1 and K2 bytes are used in

SD/SONET for protection signaling; Paragraph 48. K1 and K2 bytes are well known in the art and are defined in various SDN/SONET standards).

Gonda does not explicitly disclose the method further comprises the step of mapping the content of said K1 and K2 bytes by protocol exchange into POH bytes of the path overhead in SDH or SONET, at Low Order and/or High Order level, so as to allow the handling of more than one protecting resource shared among different working resources, both in end-to-end handling and in intermediate handling. However, Ikawa (See Figures 6-8 for the apparatus and elements) discloses the K1 and K2 values have higher-order and lower-order bytes which represent various information; Column 3 Lines 1-11, see also Figure 2. Furthermore, Ikawa discloses end-to-end and intermediate handling as seen in Figure 5. Communications from Node A to Node D represent end-to-end and Node B to Node C can represent intermediate handling. Further yet Ikawa discloses the mapping of K1 and K2 bytes being mapped to Z3 and Z4 bytes in the POH; Column 1 Lines 42-46.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Gonda to include mapping the content of the K1 and K2 bytes to higher/lower-order bytes.

One would be motivated to make the modification such that various conditions for path switching are present as taught by Ikawa; Column 3 Lines 1-11.

Regarding claim 3, Gonda does not explicitly disclose mapping K1 and K2 bytes into POH bytes of Z4 and Z7. However, Ikawa discloses transmitting contents of K1

and K2 and moving the contents of K1 and K2 into Z3 and Z4 bytes in the POH; Column 1 Lines 42-46.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Gonda to include mapping K1 and K2 bytes to unused Z-bytes in the POH.

One would be motivated to make the modification such that information can be exchanged between opposite equipment and such that various signal/switching conditions are present and the bytes are representative of the POH.

Regarding claim 6, Gonda discloses checking an idle protection resource when a failure of the working resources occurs (when a working interface fails, a protect interface (resource) assumes the working load. The protect interface is in standby (idle mode); Paragraph 6.

Regarding claim 8, Gonda does not explicitly disclose a bridge request being issued and the APS performing the action required. However, Ikawa discloses sending a request and performing the action (request is sent from one node to another requesting an action to be performed i.e. switching. The request is processed and the switching occurs; Column 3 Lines 1-33.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Gonda to include sending a request and performing the action.

One would be motivated to make the combination such that the APS can be "triggered" to perform a switching function based on requests received and when failures are detected.

Regarding claim 13, Gonda does not explicitly disclose receiving a signal failure condition and serving the higher priority condition first. However, Ikawa discloses receiving a signal failure with a priority (urgency) associated with the request. The requests are processed based on priority levels and the higher priority requests are processed first; Column 3 Lines 12-32 and Column 5 Lines 5-29.

Regarding claim 19, Gonda discloses enhancing a trail/path protection function in a SDH/SONET network, the network comprising a number of working resources and a number of protection resources and transmitting signal frames having a section overhead in SDH technology, or a Line OverHead in SONET technology (Figure 3), and a POH:

said protection function comprising linear MSP N: 1 trail protection function (in SDN/SONET networks, an APS provides protection such as N:1; Paragraph 39) based on transmission of protection information through K 1 and K2 bytes of Section OverHead in SDH or Line OverHead in SONET (K1 and K2 bytes are used in SD/SONET for protection signaling; Paragraph 48. K1 and K2 bytes are well known in the art and are defined in various SDN/SONET standards).

Gonda does not explicitly disclose the method further comprises the step of mapping the content of said K1 and K2 bytes by protocol exchange into POH bytes of the path overhead in SDH or SONET, at Low Order and/or High Order level, so as to allow the handling of more than one protecting resource shared among different working resources, both in end-to-end handling and in intermediate handling. However, Ikawa (See Figures 6-8 for the apparatus and elements) discloses the K1 and K2 values have higher-order and lower-order bytes which represent various information; Column 3 Lines 1-11, see also Figure 2. Furthermore, Ikawa discloses end-to-end and intermediate handling as seen in Figure 5. Communications from Node A to Node D represent end-to-end and Node B to Node C can represent intermediate handling. Further yet Ikawa discloses the mapping of K1 and K2 bytes being mapped to Z3 and Z4 bytes in the POH; Column 1 Lines 42-46.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Gonda to include mapping the content of the K1 and K2 bytes to higher/lower-order bytes.

One would be motivated to make the modification such that various conditions for path switching are present as taught by Ikawa; Column 3 Lines 1-11.

Gonda and Ikawa do not explicitly disclose a computer readable medium with instructions to perform the steps listed above. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Gonda to perform the functions listed above on a computer readable medium

One would be motivated to make the modification because carrying out the functions via executable instructions is faster and more efficient.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gonda in view of Ikawa and further in view of Sugawara et al. "Sugawara" US 2003/0058789.

Regarding claim 2, Gonda and Ikawa do not explicitly disclose mapping K1 and K2 bytes into K3 and K4 POH bytes. However, Sugawara discloses K3 and K4 bytes in the POH layer which include protection information and signal conditions; Paragraph 74. These K3 and K4 bits include high and low priority which represent various signal/switch conditions; Paragraph 63. Thus, one skilled in the art would appreciate a network including K1 and K2 bytes in an SOH/LOH could be mapped to unused K3 and K4 POH bytes.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Gonda to include mapping K1 and K2 bytes to K3 and K4 bytes.

One would be motivated to make the modification such that various signal/switching conditions are present and the bytes are representative of the POH as taught by Sugawara; Paragraph 63.

Claims 4, 5, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gonda in view of Ikawa and further in view of Sugawara and further yet in view of Ballintine et al. "Ballintine" US 6,366,556.

Regarding claims 4 and 5 Gonda, Ikawa, and Sugawara do not explicitly disclose the use of a two or four-bit multiframe. However, Ballintine discloses the use of a 4-bit multiframe; Column 9 Lines 40-50, se also Figures 3-5. Further, one skilled in the art would appreciate the use of a 2-bit multiframe. Using 2-bits vs. 4-bits would be a decision left up to the designer.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Gonda to include a 4-bit multiframe.

One would be motivated to make the modification in order to carry more information as taught by Ballintine; Column 1 Lines 5-14.

Regarding claims 16-17, Ikawa discloses providing the various bits of K1 and K2; Column 3 Lines 1-52, see also Figure 2. Gonda, Ikawa, and Sugawara do not explicitly disclose the use of a two or four-bit multiframe. However, Ballintine discloses the use of a 4-bit multiframe; Column 9 Lines 40-50, se also Figures 3-5. Further, one skilled in the art would appreciate the use of a 2-bit multiframe. Using 2-bits vs. 4-bits would be a decision left up to the designer.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Gonda to include a 4-bit multiframe.

One would be motivated to make the modification in order to carry more information as taught by Ballintine; Column 1 Lines 5-14.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gonda in view of Ikawa and further in view of Mesh et al. "Mesh" US 2004/0109408.

Regarding claim 7, Gonda and Ikawa do not explicitly disclose assigning a number and scanning the protection resources. However, Mesh discloses selecting one of an already pre-defined protection path from a switching table; Paragraph 31. Mesh does not explicitly disclose scanning the table in an increasing/decreasing order, however one skilled in the art would appreciate a table with corresponding entries can be processed/examined in any order including randomly.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Gonda to include numbering the protection resources and scanning them in an increasing or decreasing fashion.

One would be motivated to make the modification such that the system has multiple protection paths to choose from in light of a failure of a working path as taught by Mesh; Paragraphs 28-31.

Claims 9-12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gonda in view of Ikawa and further in view Phelps et al. "Phelps" US 2005/0088963.

Regarding claims 9-11, Gonda and Ikawa do not explicitly disclose associating comparing priority levels of the switch criterion and pre-empting protection resources. However, Phelps discloses a protection switch request is sent which includes a priority value. When the request is associated with a failed signal, a preempt occupant is determined if the priority level is greater than the current occupant the occupant is preempted, otherwise it is dropped; Paragraphs 72-73.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Gonda to include comparing the priority of the new switch criterion and using a previous protection resource.

One would be motivated to make the modification in order to determine how to properly processes the switch requests as taught by Phelps; Paragraphs 72-73.

Regarding claim 12, Gonda and Ikawa do not explicitly disclose similar and various priority levels being served with respect to their priority conditions. However Phelps discloses receiving switch requests with various priority levels associated with them (higher, lower, and similar). The requests are handled based on their associated priority levels; Paragraphs 72-75.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Gonda to include processing the requests based on various priority levels.

One would be motivated to make the modification in order to determine how to properly processes the switch requests as taught by Phelps; Paragraphs 72-73.

Regarding claim 14, Gonda and Ikawa do not explicitly disclose a new request overriding a WTR state. However, Phelps discloses the use of preempted messages being transmitted for removing extra traffic i.e. replacing/overriding; Paragraph 58.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Gonda to include overriding a WTR state.

One would be motivated to make the modification in order remove extra traffic and building the support (protection) tunnel to handle the protection switch request as taught by Phelps; Paragraph 58.

Response to Arguments

Applicant's arguments with respect to claim 1-17 and 19 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRANDON RENNER whose telephone number is (571)270-3621. The examiner can normally be reached on Monday-Thursday 7-530.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kizou Hassan can be reached on (571)272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Brandon Renner
Examiner, Art Unit 2419
12/22/2008

/Hassan Kizou/
Supervisory Patent Examiner, Art Unit 2419